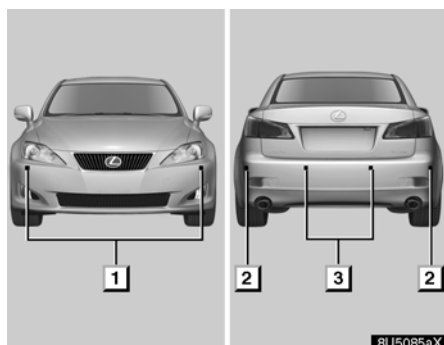
SECTION 9

LEXUS PARKING ASSIST–SENSOR

Lexus parking assist–sensor —

The Lexus parking assist–sensor is a warning system used when parking the vehicle at low speed (e.g. into a garage). It uses an ultrasonic sensor, which checks the approximate distance to an obstacle. It will inform you of the approximate distance to an obstacle by displaying information on the multi–information display and the screen, and with beeping sounds.

1 Front corner sensors

There is one of these installed on each corner of the front bumper, they inspect obstacles and will sound a warning depending on the distance to the obstacle. (See " — Front corner sensors" on page 280.)

2 Rear corner sensors

There is one of these installed on each corner of the rear bumper, they inspect obstacles and will sound a warning depending on the distance to the obstacle. (See " — Rear corner sensors" on page 281.)

3 Back sensors

There are two of these installed near the center of the rear bumper, they inspect obstacles and will sound a warning depending on the distance to the obstacle. (See " — Back sensors" on page 282.)

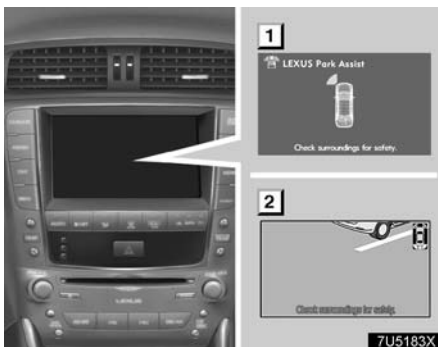
To use the parking assist–sensor, with the "ENGINE START STOP" switch in IGNITION ON mode, push "<" or ">" of the satellite switch to select the parking assist–sensor and then push the ON/OFF button. Selecting the parking assist–sensor and pushing the ON/OFF button of the satellite switch again will turn the parking assist–sensor off.

When you turn on the parking assist–sensor, the indicator light in the instrument cluster comes on and a beep sounds for one second, indicating that the parking assist–sensor is turned on.

The parking assist–sensor will remain on even after turning the "ENGINE START STOP" switch to OFF and then to IGNITION ON mode with the main switch on. However, a beep does not sound at this time.

If an error is detected in the Lexus parking assist–sensor while self–checking, beeps sound and a warning appears in the multi–information display and on the screen. For details, see " — Lexus parking assist–sensor failure warning" on page 285.

— Where to display

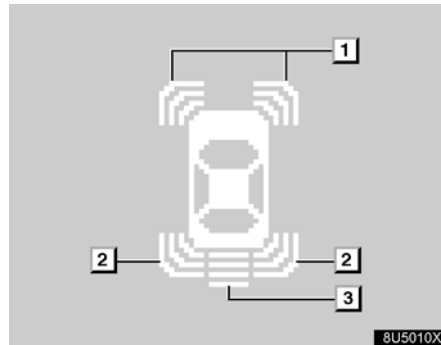
▶ **Multi−information display**

▶ **1 Touch screen (full screen display)**

2 Touch screen (vehicles with rear view monitor system)
(See " — Rear view monitor display" on page 287.)

When an obstacle is detected, the indicator bars will come on or flash, accompanied by beeping. How many bars are lit or flashing depends on the distance to the obstacle.

When the obstacle is not detected any longer, beeps will stop sounding and the multi−information display and the screen will return to the previous display.

The volume of the beeps and the display on the screen can be changed. See " — Setting the Lexus parking assist−sensor" on page 289.

— Indicators

▶ **1 Detection by front corner sensors**

2 Detection by rear corner sensors

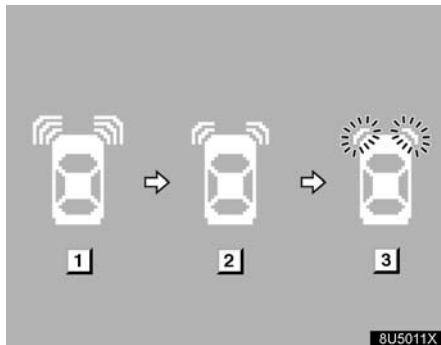
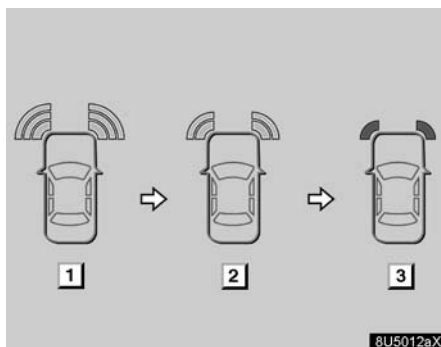
3 Detection by back sensors

The approximate distance to the obstacle is shown with up to 4 bars on the rear of the vehicle and up to 3 bars on the front corners and the rear corners of the vehicle.

⚠ CAUTION

To avoid an accident or injury, observe the following instructions, and then drive slowly using the brakes while visually confirming a safe distance around your vehicle.

- **The sensor detection range is limited around the bumper. Be sure to visually confirm safety outside the sensor detection. For the sensor detection range, see " — Detection range of sensors" on page 284.**
- **It might take time for the sensors to detect obstacles.**
- **Depending on the shape of the obstacle, indicators or beeps may not warn you properly, and the detection range may also be shortened.**
- **It might be difficult to hear beeps due to the volume of audio or air flow noise of the air conditioning.**

— Front corner sensors

▶ **Multi−information display**

▶ **Touch screen**

1 **About 1.1 ft. (37.5 cm) to about 1.5 ft. (50 cm)**
2 **About 0.8 ft. (25 cm) to about 1.1 ft. (37.5 cm)**
3 **Less than about 0.8 ft. (25 cm)**

The front corner sensor only operates when the vehicle speed is less than about 6 mph (10 km/h). It checks the approximate distance to obstacles at an angle to the front of the vehicle, and sounds a warning depending on the distance. This sensor does not operate if the transmission is in "P" position (automatic transmissions), or the parking brake is set (manual transmissions).

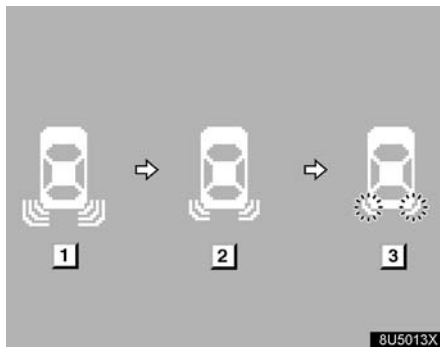
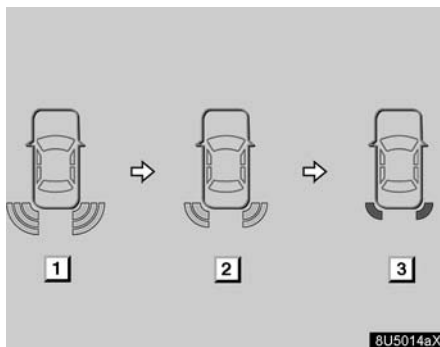
Multi−information display:
The indicator bars come on depending on the distance to the obstacle and flash when the distance between the vehicle and the obstacle is less than about 0.8 ft. (25 cm).

Touch screen:
When an obstacle is detected, indicator bars illuminate in yellow. The number of the indicator bars reduces as the vehicle gets closer to the obstacle, and turn red when the distance between the vehicle and obstacle is less than 0.8 ft. (25 cm).

Beeps:
As distance to the obstacle gets closer, the interval of the intermittent sound gets shorter, and then finally changes to a continuous sound when the distance between the vehicle and the obstacle is less than about 0.8 ft. (25 cm).

⚠ CAUTION

When you move your vehicle, be sure to visually confirm a safe distance around your vehicle and drive slowly, or an accident or injury may result.

— Rear corner sensors

▶ **Multi–information display**

▶ **Touch screen**

1 **About 1.1 ft. (37.5 cm) to about 1.5 ft. (50 cm)**

2 **About 0.8 ft. (25 cm) to about 1.1 ft. (37.5 cm)**

3 **Less than about 0.8 ft. (25 cm)**

The rear corner sensor only operates when the vehicle speed is less than about 6 mph (10 km/h) and the transmission is in “R” (automatic transmission) or reverse (manual transmission), it checks the approximate distance to obstacles at an angle to the rear of the vehicle, and sounds a warning depending on the distance.

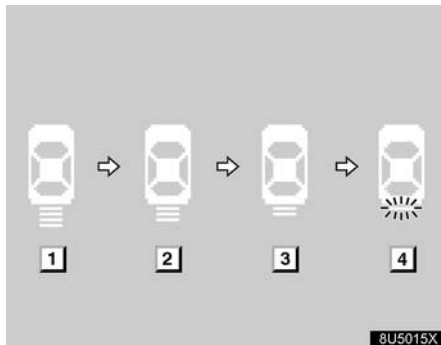
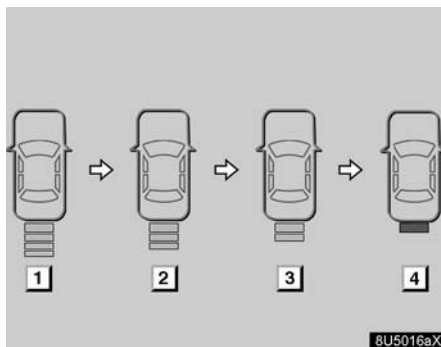
Multi–information display:
The indicator bars come on depending on the distance to the obstacle and flash when the distance between the vehicle and the obstacle is less than about 0.8 ft. (25 cm).

Touch screen:
When an obstacle is detected, indicator bars illuminate in yellow. The number of the indicator bars reduces as the vehicle gets closer to the obstacle, and turn red when the distance between the vehicle and obstacle is less than 0.8 ft. (25 cm).

Beeps:
As distance to the obstacle gets closer, the interval of the intermittent sound gets shorter, and then finally changes to a continuous sound when the distance between the vehicle and the obstacle is less than about 0.8 ft. (25 cm).

⚠ CAUTION

When reversing, be sure to visually confirm a safe distance around your vehicle to avoid an accident.

— Back sensors

▶ **Multi−information display**

▶ **Touch screen**

1 **About 1.8 ft. (60 cm) to about 4.5 ft. (150 cm)**
2 **About 1.4 ft. (45 cm) to about 1.8 ft. (60 cm)**
3 **About 1.1 ft. (35 cm) to about 1.4 ft. (45 cm)**
4 **Less than about 1.1 ft. (35 cm)**

The back sensor only operates when the transmission is in “R” (automatic transmission) or reverse (manual transmission), it checks the approximate distance to obstacles close to the rear of the vehicle, and sounds a warning depending on the distance.

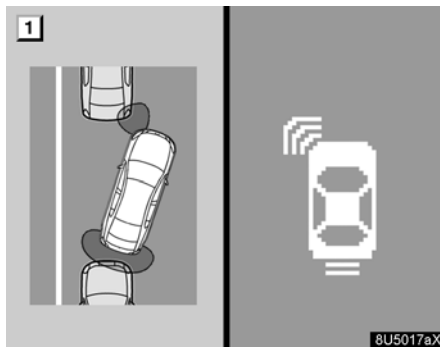
Multi−information display:
The indicator bars come on depending on the distance to the obstacle and flash when the distance between the vehicle and the obstacle is than about 1.1 ft. (35 cm).

Touch screen:
When an obstacle is detected, indicator bars illuminate in yellow. The number of the indicator bars reduces as the vehicle gets closer to the obstacle, and turn red when the distance between the vehicle and obstacle is less than 1.1 ft. (35 cm).

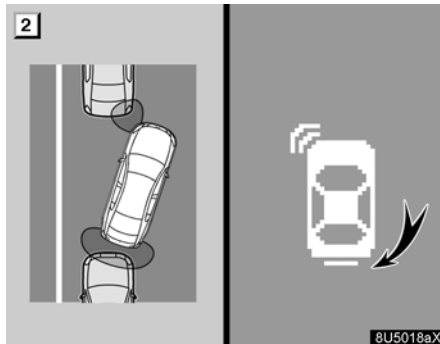
Beeps:
As distance to the obstacle gets closer, the interval of the intermittent sound gets shorter, and then finally changes to a continuous sound when the distance between the vehicle and the obstacle is less than about 1.1 ft. (35 cm).

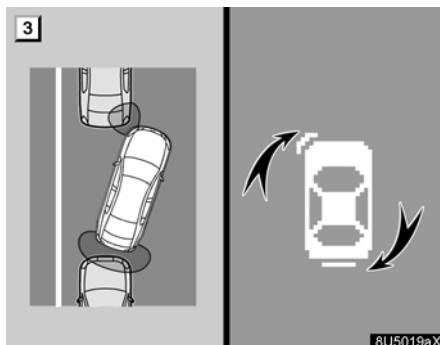
⚠ CAUTION

When reversing, be sure to visually confirm a safe distance around your vehicle to avoid an accident.

— Numerous obstacles are detected on the front and rear of the vehicle simultaneously

When obstacles are detected on the front and rear of the vehicle at the same time; the multi−information display and screen illuminate their relevant indicator bars. And beeps are as follows:

1 **Obstacles detected on the front and rear of the vehicle are not in areas where continuous beeping should sound:**

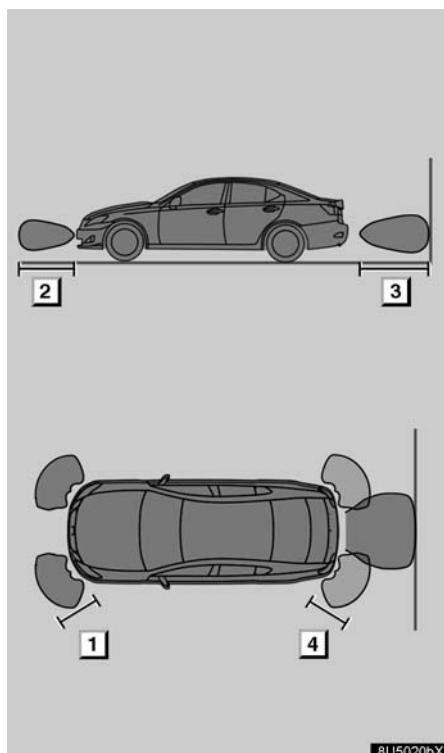
The warning for the obstacle closer to the vehicle will be issued. The above illustration indicates the obstacle detected by the back sensors is closer to the vehicle. So, the warning for the obstacle detected by the back sensors will be given.

2 **The obstacle detected on the front or rear of the vehicle is in an area where continuous beeping should sound:**

If the possibility of collision with the obstacle is high as shown, the parking assist−sensor warns the driver by continuous beeping (repeating 7 intermittent beeps and one longer beep as one cycle).

3 **Both obstacles detected on the front and rear of the vehicle are in areas where continuous beeping should sound:**

If the possibility of collision with the obstacles is very high as shown, the parking assist−sensor warns the driver by continuous beeping (repeating 3 quick beeps and one longer beep as one cycle).

CAUTION

It might be difficult to hear beeps due to the volume of audio or air flow noise of the air conditioning. To avoid an accident or injury, drive slowly using the brakes while visually confirming a safe distance around your vehicle.

— Detection range of sensors

▶ 1 **About 1.5 ft. (50 cm)**
2 **About 1.5 ft. (50 cm)**
3 **About 4.5 ft. (150 cm)**
4 **About 1.5 ft. (50 cm)**

The sensor detection range is limited around the bumper. Be sure to confirm a safe distance around your vehicle and drive slowly.

The range of the sensors may change depending on the shape of the object etc..

The Lexus parking assist−sensor may not work properly in the following cases:

- When the bumper is damaged.
- When the part near the sensors is subjected to a strong impact.
- When an accessory is installed within the sensor detection range.
- When snowflakes or mud gets on the sensors.
  (If removed, the parking assist−sensor will work properly.)
- When water is splashed from a high pressure car wash or steam on the sensors.
- When a sensor is covered with your hand.
- When the vehicle is tilted.
- In extreme hot or cold weather
  (In extreme cold weather, the error display appears and the parking assist−sensor becomes inoperative.)
- When driving on bumpy roads, slopes, gravelled roads or grass.
- Devices issuing ultrasonic waves are operated around your vehicle, such as a horn from another vehicle, motorcycle engine, air braking sound from heavy−duty vehicles.

- When another vehicle equipped with ultrasonic sensors gets close to your vehicle.
- When heavy rain or water is splashed over the vehicle.
  (Drive carefully as the braking distance may be affected.)
- When a radio antenna or fender pole is mounted on your vehicle.
- If towing eyelet is installed on your vehicle.
- When you are driving towards a tall curb stone or curb stone having right angle.
- The detection range for an object such as a traffic sign may be shortened.
- An object just under the bumper cannot be detected. Although an object lower than the location of sensors is once detected, the detection might be stopped when your vehicle gets closer to the object.
- When an obstacle is very close to the sensors.

The Lexus parking assist−sensor may not detect the following:

- Thin objects such as wire or rope
- Sound wave absorbing objects such as cotton or snow
- Objects with a sharp edge
- Tall objects with the upper part projected
- Shorter objects

CAUTION

Do not install accessories within the sensors' detection areas, as this may cause the Lexus parking assist−sensor to function incorrectly, possibly leading to an accident.

— Lexus parking assist−sensor failure warning

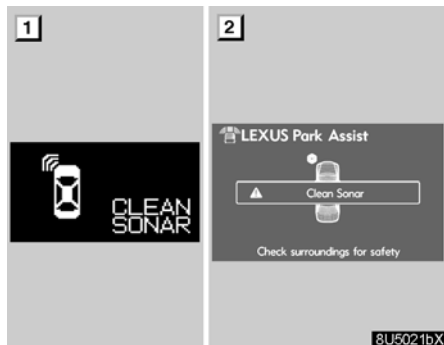
If an error is detected when the parking assist−sensor is turned on, the vehicle symbol comes on or flashes with beeping sounds.

However, the sensors functioning properly continue their obstacle detection.

The parking assist−sensor failure warning display is not given in either of the following operations:

- Changing to another screen
- Turning off the main switch for the Lexus parking assist−sensor

(a) When snowflakes or mud gets on the sensors

8U5021bX

▶ 1 **Multi–information display**
2 **Touch screen**

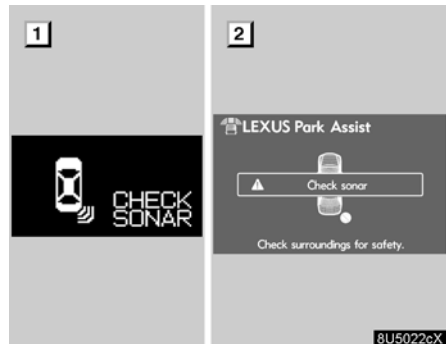
If foreign matter gets on the sensors and the parking assist–sensor cannot detect the object properly, the above message appears. At this time, the vehicle symbol and the indicator bars corresponding to the faulty sensors flash for about 7 seconds and 2 beeps sound 5 times.

After about 7 seconds, the sensor indicator bars will cease flashing, however will stay lit until the affected sensor is cleaned. Furthermore, the vehicle symbol will continue to flash until the affected sensor is cleaned.

The above illustration shows the sensor on the left front of the vehicle malfunctioning.

If the failure warning does not go off even after the foreign matter is removed, the parking assist–sensor may be malfunctioning. Have it checked by your Lexus dealer.

(b) When the sensor is malfunctioning

8U5022cX

▶ 1 **Multi–information display**
2 **Touch screen**

If the sensor cable is broken and the parking assist–sensor cannot detect the object properly, the above message appears. At this time, the indicator bars corresponding to the faulty sensor flash for about 7 seconds and 2 beeps sound 5 times.

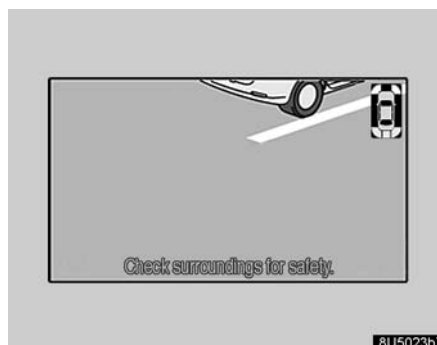
The indicator bars continue lighting after flashing.

The above illustration shows the sensor on the right rear of the vehicle malfunctioning.

If this message appears, have the parking assist–sensor checked by your Lexus dealer.

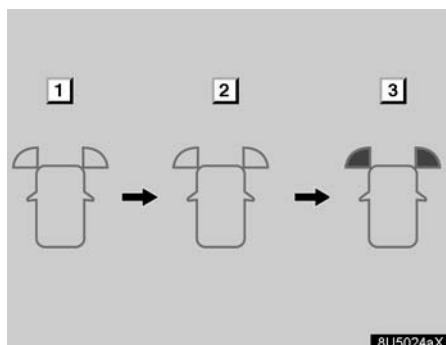
As the parking assist–sensor might be malfunctioning in the following cases, have it checked by your Lexus dealer.

- The indicator in the instrument cluster does not come on and a beep does not sound even when the parking assist–sensor main switch is turned on.
- The warning comes on despite no obstacle around the vehicle.

— Rear view monitor display (Vehicles with rear view monitor system)

On vehicles equipped with rear view monitor system, a warning appears on the right top of the parking assist monitor in the following conditions.

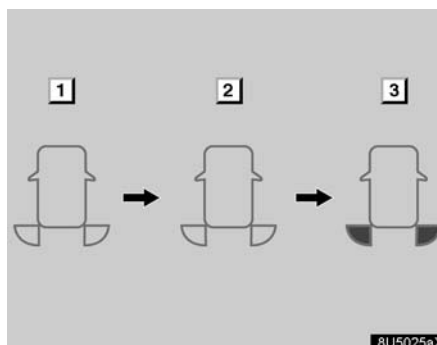
- When the shift lever is put in “R” (automatic transmission) or reverse (manual transmission) and the rear view monitor is turned on.
- When the parking assist–sensor main switch is turned on and any sensor detects an obstacle.

Although “Display OFF” is selected in the Lexus parking assist–sensor setting screen, the warning appears on the right top of the rear view monitor display.

— Front corner sensors

▶ 1 **About 1.1 ft. (37.5 cm) to about 1.5 ft. (50 cm)**
2 **About 0.8 ft. (25 cm) to about 1.1 ft. (37.5 cm)**
3 **Less than about 0.8 ft. (25 cm)**

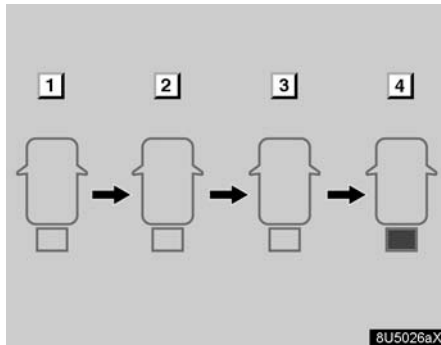
Display:
When an obstacle is detected, the indicator will flash yellow. The flashing speed becomes faster as the vehicle gets closer to the obstacle. When the distance between the vehicle and the obstacle is less than about 0.8 ft. (25 cm), the indicator will illuminate in red.

Beeps:
As distance to the obstacle gets closer, the interval of the intermittent sound gets shorter, and then finally changes to a continuous sound when the distance between the vehicle and the obstacle is less than about 0.8 ft. (25 cm).

— Rear corner sensors

▶ 1 **About 1.1 ft. (37.5 cm) to about 1.5 ft. (50 cm)**
2 **About 0.8 ft. (25 cm) to about 1.1 ft. (37.5 cm)**
3 **Less than about 0.8 ft. (25 cm)**

Display:
When an obstacle is detected, the indicator will flash yellow. The flashing speed becomes faster as the vehicle gets closer to the obstacle. When the distance between the vehicle and the obstacle is less than about 0.8 ft. (25 cm), the indicator will illuminate in red.

Beeps:
As distance to the obstacle gets closer, the interval of the intermittent sound gets shorter, and then finally changes to a continuous sound when the distance between the vehicle and the obstacle is less than about 0.8 ft. (25 cm).

— Back sensors

▶ 1 **About 1.8 ft. (60 cm) to about 4.5 ft. (150 cm)**
2 **About 1.4 ft. (45 cm) to about 1.8 ft. (60 cm)**
3 **About 1.1 ft. (35 cm) to about 1.4 ft. (45 cm)**
4 **Less than about 1.1 ft. (35 cm)**

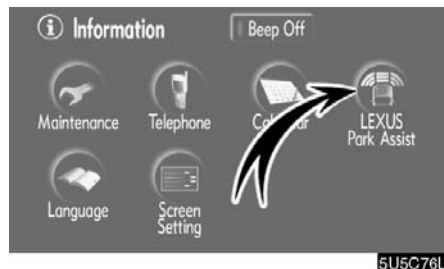
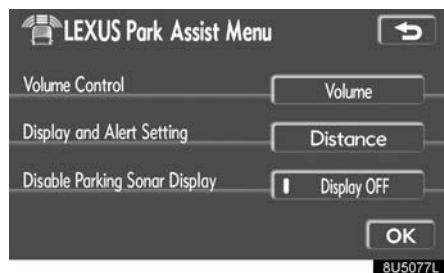
Display:
When an obstacle is detected, the indicator will flash yellow. The flashing speed becomes faster as the vehicle gets closer to the obstacle. When the distance between the vehicle and the obstacle is less than about 1.1 ft. (35 cm), the indicator will illuminate in red.

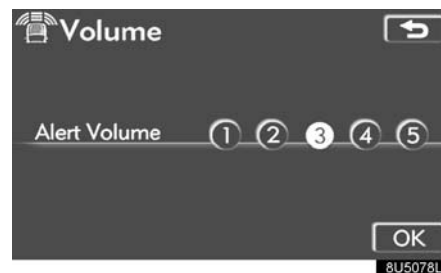
Beeps:
As distance to the obstacle gets closer, the interval of the intermittent sound gets shorter, and then finally changes to a continuous sound when the distance between the vehicle and the obstacle is less than about 1.1 ft. (35 cm).

> ⚠ **CAUTION**
>
> **When reversing, be sure to visually confirm a safe distance around your vehicle to avoid an accident.**

— Setting the Lexus parking assist–sensor

The volume of the beeps and turning on or off of the display can be set.

1. Push the “INFO” button to display the menu screen.

2. **Touch "LEXUS Park Assist".**

3. **Touch your desired item.**

(a) Changing the volume of the beeps

Touch **"Volume"** to change the volume of the beeps.

The volume has 5 levels, increasing with higher value. Select your desired volume and touch [return button] to return to the previous screen.

(b) Changing display and alert settings

Touch **"Distance"** to change the distance for the back sensors display and tone indication.

Touch **"Rear"** to switch the distance for the back sensors display and tone indication, from long distance to short distance, or from short distance to long distance.

To return to the previous screen, touch .

(c) Display off setting

Vehicles with rear view monitor system — Although "Display OFF" is turned on, if the obstacle is detected during the rear view monitoring, the warning appears on the right top of the screen.

For vehicles sold in U.S.A.

This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For vehicles sold in Canada.

This ISM device complies with Canadian ICES–001.

Cet appareil ISM est conforme a la norme NMB–001 du Canada.